

APTEROUS VIVIPAROUS FEMALE.

Length 1.0 mm.

Width4 mm.

Body, small, ovate. Color, dark bluish-green: head, yellowish or greenish; antennae, yellowish-brown toward base, darker apically; eyes, reddish; legs, yellowish or yellowish-brown, ex-



cept the tibio-femoral articulations and tarsi, which are dusky; cornicles, yellowish or yellowish-brown at base, darker apically; cauda varying from bluish-green to yellowish or yellowish-brown. Antennae about half as long as body, roughened, as shown at Fig. 2;

six-jointed¹; joints I and II sub-equal in length, I being slightly broader than II; III long, slightly longer than IV plus V, but a little shorter than VI; IV about half as long as III; V short, two-thirds as long as IV; VI longest. Cornicles long, slightly tapering, flanged at tip. Cauda prominent, flattened, with a number of curved hairs along the margin. Prothorax with a blunt tubercle on each side.

Described from many living specimens taken on roots of strawberry plants, 7 September, 1889.

¹ Although I agree with Forbes and Lichtenstein that what is here called the sixth joint of the antenna is really the prolongation of the fifth, I follow the general practice of calling it distinct for sake of brevity and convenience.

CLASSIFIED LIST OF FOOD PLANTS OF AMERICAN BUTTERFLIES, DRAWN FROM SCUDDER'S "BUTTERFLIES OF THE EASTERN UNITED STATES."

[Names followed by an * indicate the plants for which the species concerned have a decided preference. Those enclosed in parentheses are exceptional or doubtful.]

OENEIS SEMIDEA. *Cyperaceae*, *Carex vulgaris* var. *hyperborea*.

OENEIS JUTTA. *Cyperaceae*, *Carex oligosperma*; * *Gramineae*; (*Funcaceae*, *Juncus articulatus*).

CERCYONIS ALOPE. *Gramineae*.

CERCYONIS NEPHELE. *Gramineae*.

ENODIA PORTLANDIA. (*Urticaceae*, *Celtis occidentalis*); *Gramineae*.*

SATYRODES EURYDICE. *Cyperaceae*, *Scirpus eriophorum*, *Carex bromoides*; *Gramineae*.

NEONYMPHA PHOCION. *Gramineae*, *Panicum sanguinale*, *Dactolytenium aegyptiacum*.

CISSIA EURYTUS. *Leguminosae*, *Trifolium*; *Nyridaceae*, *Xyris torta*; *Gramineae*.*

CHLORIPPE CLYTON. *Rosaceae*, *Prunus*; *Aristolochiaceae*, *Aristolochia*; *Urticaceae*, *Celtis occidentalis*.*

BASILARCHIA ARCHIPPUS. *Rosaceae*, *Prunus*, *Pirus*, *Chrysobalanus oblongifolius*; *Salicaceae*.* *Salix nigra*, *S. livida* var. *occidentalis*, *S. sericea*, *Populus balsamifera* var. *candicans*, *P. tremuloides*, *P. monilifera*, *P. dilatata*.

BASILARCHIA ASTYANAX. *Rosaceae*.* *Prunus*, *Pirus*, *Crataegus*, *Cydonia*; *Grossulaceae*, *Ribes*; *Ericaceae*, *Vaccinium stami-*

neum; *Cupuliferae*. *Carpinus americana*, *Quercus ilicifolia*; *Salicaceae*. *Salix*, *Populus*.

BASILARCHIA ARTHEMIS. *Tiliaceae*. *Tilia*; *Rosaceae*, *Crataegus*, *Amelanchier*; *Caprifoliaceae*; *Urticaceae*, *Ulmus*; *Betulaceae*. *Betula lenta*; * *Salicaceae*. *Populus balsamifera*.

POLYGONIA INTERROGATIONIS. *Tiliaceae*, *Tilia americana*; *Urticaceae*, *Ulmus americana*, * *Celtis occidentalis* *Urtica*, *Boehmeria cylindrica*, *Humulus lupulus*.

POLYGONIA COMMATA. (*Tiliaceae*, *Tilia*); *Grossulaceae*, *Ribes*; *Urticaceae*, * *Humulus lupulus*, *Ulmus americana*, *Urtica*, *Boehmeria cylindrica*.

POLYGONIA SATYRUS. *Ericaceae*. *Azalea*; *Urticaceae*, * *Urtica*.

POLYGONIA FAUNUS. *Grossulaceae*, *Ribes*; *Betulaceae*, *Betula lenta*; * *Salicaceae*, *Salix humilis*.

POLYGONIA GRACILIS. (Probably one of preceding or succeeding.)

POLYGONIA PROGNE. *Rosaceae*, *Rubus*; *Grossulaceae*, * *Ribes rotundifolium*, *Ribesia*; *Urticaceae*, *Ulmus americana*.

EUGONIA J-ALBUM. *Betulaceae*, *Betula alba* var. *populifolia*; (*Salicaceae*, *Salix*, *Populus*).

EUVANESSA ANTIOPA. *Rosaceae*; *Urticaceae*, *Ulmus americana*, * *Celtis occidentalis*; *Betulaceae*. *Betula humilis*; *Salicaceae*, *Salix*, * *Populus candicans*, *P. dilatata*.

In Europe: *Tiliaceae*, *Tilia*; *Betulaceae*. *Betula humilis*; *Salicaceae*, *Salix*.

AGLAIS MILBERTI. *Urticaceae*, * *Urtica dioica*, *U. gracilis*; (*Salicaceae*, *Salix*).

VANESSA ATALANTA. *Urticaceae*, *Urtica*, * *Humulus lupulus*, *Boehmeria cylindrica*, *Parietaria debilis*.

In Europe: *Urticaceae*, *Urtica*, *Parietaria*.

VANESSA HUNTERA. *Compositae*, *Gnaphalium polycephalum*, * *G. purpureum*, * *Antennaria plantaginifolia*, * *Anaphalis margaritacea*, * *Helianthus*, *Senecio cineraria*, *Artemisia ludoviciana*; *Borraginaceae*, *Myosotis*.

VANESSA CARDUI. *Malvaceae*, *Althaea rosea*; *Compositae*, *Centaurea benedicta*, * *Cnicus lanceolatus*, * *C. arvensis*, * *Carduus nutans*, * *Silybum marianum*, *Onopordon acanthium*, *Arctium lappa*, *Senecio cineraria*, *Helianthus* sp., *Anaphalis margaritacea*, *Artemisia*; *Borraginaceae*, *Borrago officinalis*; *Urticaceae*, *Urtica*.

In Europe: *Malvaceae*, *Malva rotundifolia*; *Compositae*, *Carduus*, * *Cnicus*, * *Onopordon*, *Centaurea benedicta*, * *Cynara scolymus*, *Achillea millefolium*, *Gnaphalium arvense*, *Filago arvensis*; *Borraginaceae*, *Echium*.

In Asia and Africa: *Compositae*, *Artemisia*, *Blumea*; *Malvaceae*, * *Malva*.

JUNONIA COENIA. *Onagraceae*, *Ludwigia alternifolia*; *Plantaginaceae*, *Plantago lanceolata*, *P. virginica*; *Scrophulariaceae*, *Gerardia purpurea*, * *Linaria canadensis*.

EUPTOIETA CLAUDIA. *Berberidaceae*, *Podophyllum peltatum*; *Violaceae*, *Viola tricolor*; *Portulacaceae*, *Portulaca*; *Leguminosae*, *Desmodium paniculatum*; *Passifloraceae*, * *Passiflora incarnata*, *P. caerulea*; *Grossulaceae*, *Sedum*; * *Borraginaceae*, *Cynoglossum*?

SPEYERIA IDALIA. *Violaceae*, *Viola*; (*Compositae*, *Sericocarpus conyzoides*).

ARGYNNIS CYBELE. *Violaceae*, *Viola*.

ARGYNNIS APHRODITE. *Violaceae*, *Viola*.

ARGYNNIS ATLANTIS. *Violaceae*, *Viola*.

BRENTHIS MYRINA. *Violaceae*.

BRENTHIS MONTINUS. (*Violaceae*; *Rosaceae*, *Geum radiatum*).

BRENTHIS BELLONA. *Violaceae*.

PHYCIODES THAROS. *Compositae*, *Aster*, *A. novaeangliae*, * (*Actinomeris*).

PHYCIODES BATESII. (*Compositae*).

CHARIDRYAS NYCTEIS. *Compositae*, *Aster* [*Doellingeria*] *umbellatus*, *Rudbeckia laciniata*, *Helianthus divaricatus*, * *Actinomeris squarrosa*, * *Verbesina helianthoides*.

CINCLIDIA HARRISII. *Compositae*, *Aster* [*Doellingeria*] *umbellatus*.

EUPHYDRYAS PHAETON. *Grossulaceae*, *Ribesia*; *Caprifoliaceae*, *Lonicera ciliata*,

Viburnum dentatum; *Plantaginaceae*, Plantago; *Scrophulariaceae*, Chelone glabra,* Mimulus ringens, Gerardia pedicularia.

ANOSIA PLEXIPPUS. *Apocynaceae*, Apocynum androsaemifolium; *Asclepiadaceae*, Asclepias cornuti,* A. purpurascens, A. incarnata, A. tuberosa, A. amplexicaulis, A. tomentosa, A. curassavica, A. nivea, Acerates.

HYPATUS BACHMANI. *Urticaceae*, Celtis occidentalis.

CALEPHELIS BOREALIS. Unknown.

STRYMON TITUS. *Rosaceae*, Prunus;* *Compositae*, Eupatorium coelestinum; *Cupuliferae*.

ERORA LAETA. Unknown.

INCISALIA NIPHON. *Leguminosae* (Lupinus perennis); *Coniferae*, Pinus.* (Juniperus).

INCISALIA IRUS. *Rosaceae*, Prunus;* *Leguminosae*, Lupinus perennis, Cercis canadensis; *Ericaceae*, Vaccinium corymbosum, Leucothoe racemosa, Cyrilla racemifolia; *Aquifoliaceae*, Ilex.

INCISALIA AUGUSTUS. Unknown.

URANOTES MELINUS. *Hypericaceae*, Hypericum; *Leguminosae*; *Rosaceae*, Crataegus coccinea, C. apiifolia; *Borraginaceae*, Cynoglossum officinale; *Urticaceae*, Humulus lupulus.*

MITURA DAMON. *Coniferae*, Juniperus virginiana;* *Smilacaceae*, Smilax.

THECLA ONTARIO. Unknown.

THECLA LIPAROPS. *Rosaceae*,* Crataegus, Prunus, Amelanchier canadensis; *Ericaceae*, Vaccinium corymbosum; *Aquifoliaceae*, Ilex; *Cupuliferae*, Quercus, Castanea; *Salicaceae*, Salix.

THECLA CALANUS. (*Rosaceae*, Crataegus); *Juglandaceae*,* Juglans cinerea,arya, C. glabra; *Cupuliferae*, Quercus rubra, Q. falcata.

THECLA EDWARDSII. *Cupuliferae*, Quercus.

THECLA ACADICA. *Salicaceae*, Salix.

EVERES COMYNTAS. *Leguminosae*, Lespedeza capitata, Phaseolus perennis, Desmodium marylandicum, Galactia, Trifolium.

CYANIRIS PSEUDARGIOLUS. *Ranunculaceae*, Cimicifuga racemosa;* *Cruciferae*, Rhus, (Nasturtium); *Rhamnaceae*, Ceanothus americanus, (Rhamnus carthartica); *Sapindaceae*, Aesculus californica; *Leguminosae*, Erythrina herbacea, Apios tuberosa, (Trifolium); *Rosaceae*, Spiraea salicifolia, (Amelanchier canadensis); *Cornaceae*, Cornus;* *Caprifoliaceae*, Viburnum acerifolium; *Compositae*, Verbena helianthoides, Actinomeris squarrosa,* Dimorphantes manchuricus; *Ericaceae*, Vaccinium, V. corymbosum; *Aquifoliaceae*, Ilex, (Begonia); (*Asclepiadaceae*, Asclepias; *Salicaceae*, Salix).

NOMIADES COUPERI. (*Leguminosae*, Vicia cracca.)

RUSTICUS SCUDDERII. (*Rhamnaceae*, Ceanothus); *Leguminosae*, Lupinus perennis.

CHRYSOPHANUS THOE. *Rutaceae*, Xanthoxylum; *Polygonaceae*, Polygonum, Rumex crispus.

EPIDEMIA EPIXANTHE. (*Gentianaceae*, Menyanthes trifoliata; *Polygoniaceae*, Persicaria, Rumex verticillatus; *Lauraceae*).

HEODES HYPOPHLAEAS. *Leguminosae*, Trifolium; *Polygoniaceae*, Rumex acetosella,* R. crispus.

FENISECA TARQUINIUS. Plant lice with clustering habit, especially *Schizonetra tessellata*.*

CALLIDRYAS EUBULE. *Leguminosae*, Cassia* marylandica, C. chamaecrista, C. occidentalis, C. tora, Trifolium.

XANTHIDIA NICIPPE. *Leguminosae*, Cassia* marylandica, C. occidentalis, C. tora, Trifolium.

EUREMA LISA. *Leguminosae*, Cassia chamaecrista,* C. occidentalis, C. nictitans, (Trifolium), Glycine.

EURYMUS INTERIOR. (*Leguminosae*, Desmodium; *Ericaceae*, Vaccinium).¹

EURYMUS PHILODICE. *Leguminosae*, Trifolium* agrarium, T. repens, T. pratense, Baptisia tinctoria, Lupinus perennis, Medi-

¹ Mr. Fletcher writes that Bean has bred this species on Vaccinium and on Salix. (S. H. S.)

cago sativa, (*M. denticulata*), *Astragalus caryocarpus*, *Pisum sativum*, *Vicia cracca*. *Cytisus*, *Caragana*.

EURYMUS EURYTHEME. *Leguminosae*, *Trifolium reflexum*,* *T. stoloniferum*,* *T. repens*, *T. tridentatum*. *Hosackia*, (*Astragalus caryocarpus*, *A. crotalariae*).

ANTHOCHARIS GENUTIA. *Cruciferae*, *Sisymbrium thaliana*, *Barbarea vulgaris*, *Arabis perfoliata*, *Cardamine*, (*Capsella bursa pastoris*).

PONTIA PROTODICE. *Cruciferae*, *Brassica oleracea*,* *Lepidium virginicum*, *Thlaspi*, (*Capsella bursa pastoris*), *Alyssum maritimum*; *Resedaceae*, *Reseda*; *Compositae*, *Erigeron*; (*Solanaceae*, *Solanum carolinense*).

PIERIS OLERACEA. (*Ranunculaceae*, *Caltha leptosepala*); *Cruciferae*, *Brassica rapa*,* *B. oleracea*. *Raphanus sativa*, *Nasturtium armoracia*, *Sinapis*,* *Arabis** *drummondii*, *A. perfoliata*. *Barbarea vulgaris*.

PIERIS RAPAE. *Cruciferae*, *Brassica oleracea*,* *B. napa*, *Nasturtium armoracia*, *Raphanus*, *Sinapis*, *Matthiola*, *Alyssum maritimum*, *Nasturtium palustre*, *Barbarea vulgaris*. *Cakile americana*; *Resedaceae*. *Reseda odorata*; (*Geraniaceae*, *Tropaeolum*).

In Europe: *Cruciferae*, *Brassica*, *Sinapis*. *Nasturtium*, *Hesperis*, *Matthiola*, *Chieranthus*, *Erysimum*, *Lepidium*, *Raphanus*; *Resedaceae*, *Reseda*; *Salicaceae*, *Salix*.

LAERTIAS PHILENOR. *Aristolochiaceae*. *Aristolochia** *serpentaria*, *A. siphon*, *Asarum canadense*; *Polygonaceae*, *Polygonum* (*convolvulus*).

IPHICLIDES AJAX. *Anonaceae*, *Asimina triloba*,* *A. parviflora*, *A. grandiflora*, *A. pygmaea*, *Anona palustris*; *Lauraceae*, *Benzoin odoriferum*; *Ericaceae*, *Vaccinieae*.

JASONIADES GLAUCUS. *Magnoliaceae*, *Liriodendron tulipifera*,* *Magnolia acuminata*; *Tiliaceae*, *Tilia americana*; *Rutaceae*. *Ptelea trifoliata*; (*Vitaceae*, *Vitis*); *Rosaceae*, *Prunus*, *P. serotina*, *P. pennsylvanica*, *P. virginiana*, *P. americana*, *Pirus malus*, *Cydonia vulgaris*. (*Crataegus*); *Styracaceae*,

Styrax americana; *Bignoniaceae*, *Catalpa bignonioides*); *Oleaceae*, *Fraxinus sambucifolia*,* *F. platycarpa*, *F. americana*, *F. trifoliata*, *Syringa vulgaris*; *Lauraceae*, *Sassafras officinale*: *Urticaceae*, *Humulus lupulus*; *Fuglandaceae*, *Carya*; *Capuliferae*, *Quercus tinctoria*; *Betulaceae*, *Betula** *alba*, *B. lenta*, *Alnus incana*; *Salicaceae*, *Salix*; *Populus** *tremuloides*.

EUPHROEDES TROILUS. *Magnoliaceae*, *Magnolia glaucus*; *Rutaceae*, *Xanthoxylum americanum*; *Rosaceae*. *Prunus serotina*, *P. persica*, *Pirus arbutifolia*; (*Convolvulaceae*, *Ipomoea batatas*); *Oleaceae*, *Syringa vulgaris*; *Lauraceae*,* *Benzoin odoriferum*, *Sassafras officinale*; *Coniferae*, *Juniperus sabini* *ana*.

HERACLIDES CRESPHONTES. *Rutaceae*,* *Citrus*,* *Ptelea trifoliata*, *Xanthoxylum americanum*. *X. clava-herculis*, *Dictamnus fraxinella*; *Cornaceae*, *Nyssa multiflora*; *Lauraceae*, *Persea carolinensis*; *Salicaceae*, *Populus dilatata*; *Piperaceae*, *Piper peltatum*. *P. umbellatum*, *P. mollicornum*.

PAPILIO POLYXENES. *Rutaceae*, *Dictamnus fraxinella*; *Umbelliferae*, *Daucus carota*,* *Hydrocotyle*, *H. umbellata*, *Conium maculatum*, *Cicuta maculata*, *C. virosa*, *C. bulbifera*, *Sium cicutae-folium*, *Apium** *divaricatum*, *A. graveolens*, *Discopleura capillacea*, *Carum petroselinum*, *C. carui*, *Anethum graveolens*, *Foeniculum vulgare*, *Archangelica*, *Tiedemannia*, *T. teretifolia*, *Pastinaca sativa*, (*Arracia esculenta*).

EUDAMUS PROTEUS. *Cruciferae*, *Brassica*; *Leguminosae*,* *Wistaria frutescens*, *Desmodium viridiflorum*, *Phaseolus perennis*, *Clitoria mariana*, *C. ternatea*.

EPARGYREUS TITYRUS. *Leguminosae*, *Amorpha fruticosa*, *Robinia pseudacacia*, *R. viscosa*. *R. hispida*, *R. neomexicana*. *Wistaria frutescens*, *Lespedeza capitata*, *Lathyrus paluster*, *Apios tuberosa*, *Desmodium marylandicum*, *D. nudiflorum*, *D. canadense*, *Amphicarpaea monoica*, *Gleditschia*.

ACHALARUS LYCIDAS. (*Fumariaceae*, *Corydalis glauca*); *Leguminosae*, *Desmo-*

dium* dillenii, *D. paniculatum*. (Indigofera, Baptisia?); *Convolvulaceae*, *Ipomaea pandurata*.

THORYBES BATHYLLUS. *Leguminosae*, *Rhynchosia tomentosa*, *Tephtisia ambigua*, *Centrosema virginianum*, (*Lespedeza hirta*).

THORYBES PYLADES. *Leguminosae*, *Trifolium** *pratense*, *T. repens*, *Lespedeza capitata*,* *L. hirta*, *Desmodium dillenii*.

THANAOS LUCILIUS. *Ranunculaceae*, *Aquilegia canadensis*;* (*Chenopodiaceae*, *Chenopodium album*).

THANAOS PERSIUS. *Salicaceae*, *Salix humilis*, *Populus balsamifera*, *P. tremuloides*, *P. grandidentata*.

THANAOS JUVENALIS. *Leguminosae*, *Apios tuberosa*, *Lathyrus*, *Galactia pilosa*, (*G. glabella*); *Cupuliferae*, *Quercus** *phellos*, *Q. ilicifolia*, *Q. alba*, *Corylus*.

THANAOS HORATIUS. *Leguminosae*, *Wistaria frutescens*.

THANAOS TARENTIUS. (*Leguminosae*: *Cupuliferae*.)

THANAOS MARTIALIS. (*Rhamnaceae*, *Ceanothus americanus*); *Leguminosae*, *Indigofera caroliniana*; (*Haemodoraceae*, *Lachnanthes tinctoria*).

THANAOS AUSONIUS. (*Leguminosae*?).

THANAOS BRIZO. *Leguminosae*, *Galactia glabella*; *Cupuliferae*, *Quercus ilicifolia*.

THANAOS ICELUS. (*Leguminosae*, *Baptisia*?); *Hamamelaceae*, *Hamamelis*; (*Cupuliferae*, *Corylus*); *Salicaceae*, *Populus tremuloides*, (*Salix cordata*).

PHOLISORA CATULLUS. (*Compositae*, *Ambrosia*); *Labiatae*, *Monarda punctata*, *Origanum vulgare*; *Chenopodiaceae*, *Chenopodium album*;* *Amarantaceae*,* *Amarantus albus*.

HESPERIA MONTIVAGA. *Malvaceae*, *Sida*, *Althaea*, *Malva*, *Abutilon avicennae*.

HESPERIA CENTAUREAE. (*Labiatae*, *Mentha*?)

ANCYLOXIPHA NUMITOR. *Gramineae*.

PAMPHILA MANDAN. *Gramineae*, *Panicum crus galli*, *P. sanguinale*, *Triticum repens*.

AMBLYSCHIRTES VIALIS. *Gramineae*, *Poa pratensis*.

AMBLYSCHIRTES SAMOSET. *Gramineae*.

POANES MASSASOIT. (*Gramineae*.)

PHYCANASSA VIATOR. (*Gramineae*.)

ATRYTONE LOGAN. *Gramineae*, *Erianthus alopecuroides*.

ATRYTONE ZABULON. *Gramineae*.

HYLEPHILA PHYLAEUS. *Gramineae*, *Panicum sanguinale*.

ERYNNIS SASSACUS. *Gramineae*, *Panicum sanguinale*.

ERYNNIS MANITOBA. (*Gramineae*.)

ERYNNIS METEA. *Gramineae*.

ERYNNIS ATTALUS. (*Gramineae*.)

ATALOPEDES HURON. *Gramineae*, *Cynodon dactylon*.

ANTHOMASTER LEONARDUS. *Gramineae*.

POLITES PECKIUS. (*Gramineae*.)

THYMELICUS AETNA. (*Gentianaceae*, *Sabbatia gracilis*, *S. elliotii*); *Gramineae*, *Panicum sanguinale*.

THYMELICUS BRETTUS. *Gramineae*, *Paspalum ciliatifolium*.

THYMELICUS MYSTIC. *Gramineae*.

LIMOCHORES BIMACULA. (*Gramineae*.)

LIMOCHORES MANATAAQUA. *Gramineae*.

LIMOCHORES TAUMAS. *Gramineae*.

LIMOCHORES PONTIAC. (*Gramineae*.)

EUPHYES METACOMET. (*Gramineae*.)

EUPHYES VERNA. (*Gramineae*.)

CALPODES ETHLIUS. *Cannaceae*, *Canna flaccida*, *C. indica*.

OLIGORIA MACULATA. (*Gramineae*.)

LEREMA ACCIUS. (*Leguminosae*, *Wistaria frutescens*); *Gramineae*, *Zea mays*, *Erianthus alopecuroides*.

LEREMA HIANA. (*Gramineae*.)